

Notice of Allowability

Application No.

10/767,071

Applicant(s)

LEE, SANG UK

Examiner

Wayne Cai

Art Unit

2681

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 01/30/2004.
2. ☒ The allowed claim(s) is/are 4-9.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some* c) ☐ None of the:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☐ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

The application has been amended as follows:

In the Claims:

Claim 4, A method for correcting positioning errors of a mobile station positioning system in a Code Divisional Multiple Access communication system, the method comprises the steps of:

delaying a PN code transmitted to a mobile station from a base station transceiver subsystem via a repeater, for a +64Chip period or a +64Chip+nChip period in a +64Chip delay element or a +64Chip+nChip delay element;

combining the PN code transmitted to the mobile station from the base station transceiver subsystem via the repeater with a PN code created by delaying the PN code transmitted to the mobile station from the ~~specific~~ base station transceiver subsystem via the repeater for the +64Chip period or the +64Chip+nChip period in a combiner, thereby transmitting the combined PN code to the mobile station;

receiving the PN code of the base station transceiver subsystem and the PN code created by delaying the PN code of the base station transceiver subsystem for the +64Chip period or the +64Chip+nChip period and transmitting the received PN codes to

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the mobile station positioning system via a mobile communication network, in the mobile station;

analyzing the PN codes received in the mobile system via a mobile positioning center to determine whether the PN code of the base station transceiver subsystem ~~system~~ is transmitted to the mobile station via the repeater, in a position determination entity of the mobile station positioning system; and

if it is determined that the PN code of the base station transceiver subsystem is transmitted to the mobile station via the repeater, subtracting a delayed time due to a corresponding repeater previously stored in a database from a time at which the PN code of the base station transceiver subsystem is received in the mobile station via the repeater, to calculate a distance between the base station transceiver subsystem and the mobile station in the position determination entity.

(END OF AMENDMENT)

Allowable Subject Matter

2. The following is an examiner's statement of reasons for allowance:

Regarding the independent claim 4, although Riley et al. (US – 6,832,090 B2) teach or suggest the location of wireless unit is based on a time of arrival (TOA) of the signal transmitted from a plurality of identified based transceiver stations (BTSS), and the delay in the TOA is based on the PN offset as well as the transmission propagation delay. Also, Riley et al. disclose a repeater, which is connected and received from the BTS, and retransmit the signal. Kim et al. (US 2004/0110514 A1) on the other hand

disclose an apparatus and method for determining position information of a mobile station. The apparatus directly estimates a propagation delay error by measuring a signal strength of a propagation signal for use in a mobile communication system, and reduces a MS position error. Kim et al even disclose combining a mobile station position information with the satellite position information, and transferring to the position calculator. However, none of the prior arts teach or suggest delaying a PN code transmitted to a mobile station from a base station transceiver subsystem via repeater. It then combines the PN code transmitted with a PN code created as disclosed in the claim in order to correct positioning errors of a mobile station positioning system in a Code Divisional Multiple Access communication system. Furthermore, the prior arts fail to teach or suggest all the limitations in the same order, and specific as claimed.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wayne Cai whose telephone number is (571) 272-7798. The examiner can normally be reached on Monday-Friday; 9:00-6:00; alternating Friday off.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Feild can be reached on (571) 272-4090. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Wayne Cai
Examiner
Art Unit 2681



JOSEPH FEILD
SUPERVISORY PATENT EXAMINER